# Rescue and recovery at World Trade Center, Pentagon

*More than 700 rescue workers were dispatched on Tuesday by the Federal Emergency Management Agency, responding to terrorist attacks on the World Trade Center in New York and the Pentagon in Arlington, Va.*

*Eight FEMA task forces sped to the World Trade Center, while four task forces provided help at the Pentagon. The Army Corps of Engineers is assisting FEMA with debris removal at both sites. FEMA is coordinating its activities with the FBI Information Center.*

*Search and rescue teams will work nonstop, trying to reach as many victims as possible within the next five days. Survival rates decrease dramatically after that.*

## Who are the rescuers?

- There are 28 urban search and rescue task forces across the nation, funded by FEMA, the Federal Emergency Management Agency. Each task force has 62 members.
- Municipal firefighters, engineers and medical professionals will make up task forces.
- Task forces assist when help is requested, either from the state or, in international situations, the country where the disaster occurred. Teams were on their way within six hours of being called.
- Once on site, teams will work 24 hours a day in 12-hour shifts. Task forces are structured so two people are trained to do the same job. Each shift is fully staffed.
- Task forces are self-sufficient. They take their own shelter, toilets, food and water to disaster scenes.
- Two U.S. task forces are allowed to travel internationally. They are Fairfax County Fire and Rescue Department in Virginia and Metro-Dade Fire Department in Florida.

## People are rescue workers' first resource

Before the development of Search Cams and Life Detectors, workers relied on survivors to decide where to look for buried victims — and they still do.

"It's their families and friends that are under all the rubble," says Andy Hubert, Fairfax County Fire and Rescue logistics manager. "They've been exploring the area since the disaster happened when you've just walked onto the scene."

So why spend thousands of dollars on equipment?

"I can't tell you the time we waste digging for nothing, chasing dead leads," Hubert says. "Everyone wants to hear their family moving under the debris. These instruments let us make sure there is someone alive under the rubble before we spend half a day recovering a dead body. They also show how a person is trapped so we know how to execute a rescue."

## After the mission

To help search teams deal with psychological effects of what they have seen, or emotions associated with unsuccessful rescue attempts, FEMA usually organizes a debriefing session.

Debriefers will ride back with task forces to get an idea of how group members are feeling after the mission. Two or three days later, a formal session will be set up with crisis and mental health counselors. After the initial session, counselors will stay in touch with task force members' friends and family to see if they need additional support.

*Sources: Fairfax County Fire and Rescue Department; Federal Emergency Management Agency*

## Communicating without words

Wall marks will tell other task forces if an area has been searched.

*Time/date task force personnel left structure*

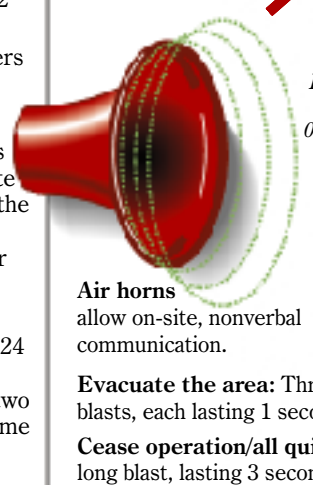
9/11/01
1400

*FEMA task force identifier — Virginia Task Force 1* — VA-TF1

RATS — Hazards

2 LIVE
3 DEAD

*Live and dead victims 0 = No victims*



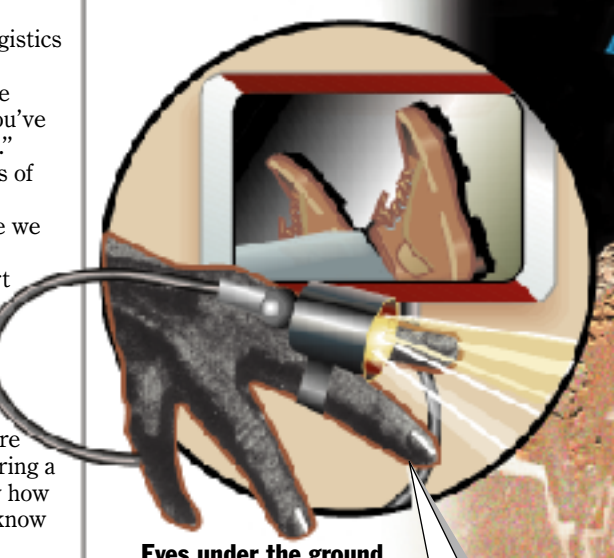
**Air horns** allow on-site, nonverbal communication.

**Evacuate the area:** Three short blasts, each lasting 1 second.

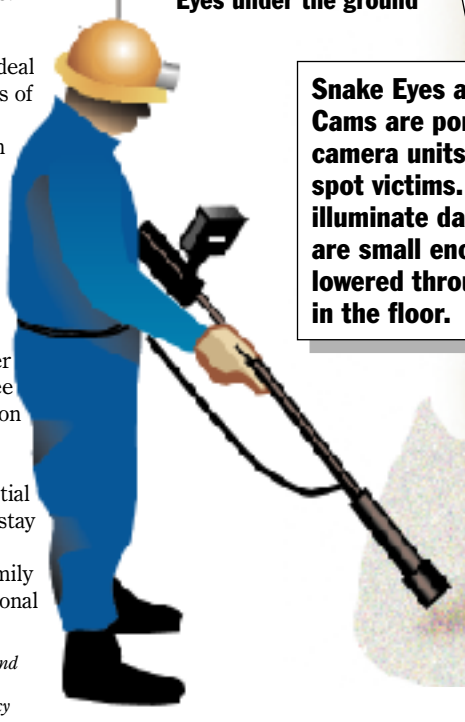
**Cease operation/all quiet:** One long blast, lasting 3 seconds.

**Resume operations:** One long and one short blast.

**"Sniffer dogs"** are trained to bark for 30 seconds continuously if they think they've located a victim. A second dog is then brought in. If both dogs respond the same way, search equipment is used as final confirmation and a rescue operation begins.

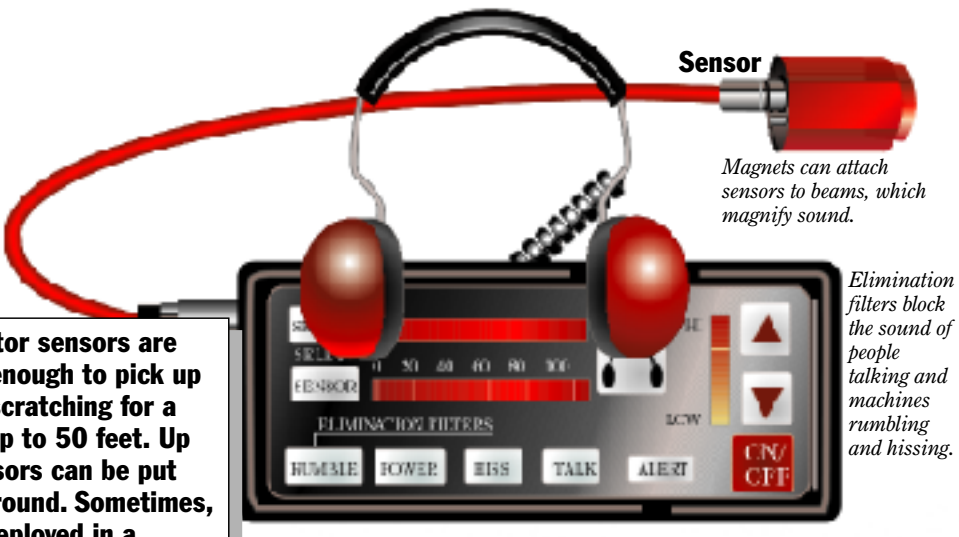


**Eyes under the ground**



**Snake Eyes and Search Cams are portable camera units that can spot victims. They can illuminate dark areas and are small enough to be lowered through a crack in the floor.**

**Life detector sensors are sensitive enough to pick up a person scratching for a distance up to 50 feet. Up to six sensors can be put into the ground. Sometimes, they are deployed in a pattern to home in on survivors.**




*Magnets can attach sensors to beams, which magnify sound.*

*Elimination filters block the sound of people talking and machines rumbling and hissing.*

*Enlargement of front view*




**When tunneling, workers use chain saws to cut through walls and floors to find victims. Cut sections are bolted and lifted by cranes and pulleys.**



**Cribbing keeps walls from collapsing.**

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